

**Amendments to the Drawings:**

The attached replacement drawing sheets make changes to Figs. 1, 3 and 4 and replace the original sheets with Figs. 1, 3 and 4.

Attachment: Replacement Sheets (3)

**REMARKS**

Claims 1-10 are pending in this application. By this Amendment, claims 1-3, 7 and 8 are amended and claim 10 is added. The amendments and added claim introduce no new matter. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Ralis in the January 8, 2008 brief telephone interview. Applicants separate record of the substance of the interview is incorporated into the following remarks.

The Office Action, in paragraph 2, objects to the drawings allegedly because cross-sectional elements in the drawings are not cross-hatched. During the January 8 telephone interview, the Examiner indicated that the objection is directed to only Figs. 1, 3 and 4. Without conceding the propriety of the objection, the relevant Figures are amended to obviate this objection. Withdrawal of the objection to the drawings is respectfully requested.

The Office Action, in paragraph 4, rejects claims 1-9 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. Specifically, the Office Action asserts that claims 1-3 and 7 are unclear because they contain features recited in parentheses. Without conceding the propriety of the rejection, claims 1-3 and 7 are amended to obviate this rejection. Withdrawal of the rejection is respectfully requested.

The Office Action, in paragraph 6, rejects claims 1-3 and 5-7 under 35 U.S.C. §§102(a) and 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0131918 to Nelson et al. (hereinafter "Nelson"). The Office Action, in paragraph 9, rejects claim 5 as being unpatentable over Nelson. The Office Action, in paragraph 10, rejects claim 4 under 35 U.S.C. §103(a) as being unpatentable over Nelson in view of U.S. Patent Application Publication No. 2002/0027133 to Kellogg et al. (hereinafter "Kellogg"). The Office Action, in paragraph 11, rejects claim 8 under 35 U.S.C. §103(a) as being

unpatentable over Nelson in view of U.S. Patent No. 6,423,190 to Hemmingway et al. (hereinafter "Hemmingway"). The Office Action, in paragraph 12, rejects claim 9 under 35 U.S.C. §103(a) as being unpatentable over Nelson in view of Hemmingway and U.S. Patent Application Publication No. 2005/0229564 to Okubo et al. (hereinafter "Okubo"). These rejections are respectfully traversed.

The Office Action, in paragraph 6, asserts that Nelson teaches a plasma reactor with features that allegedly correspond to the combination of all of the features recited in independent claim 1. The analysis of the Office Action fails for at least the following reasons.

Nelson does not teach at least a distance "a" from an edge of the conductive film to an edge of the ceramic body on a second pair of parallel end faces of the conductive-film-containing electrode adjacent to the first pair of parallel end faces and a thickness "c" of the ceramic body satisfying a relationship " $(c/2) \leq a \leq 5c$ ," as recited in claim 1.

For example, Nelson does not disclose a distance "a" and a thickness "c" of the ceramic body according the relationship recited in claim 1. The Office Action asserts that element 35 in Figs. 4-6 of Nelson is considered to correspond to a distance "a". With reference to Fig. 1 of the specification, claim 1 is amended to clarify a first pair of parallel end faces and a second pair of parallel end faces. Claim 1 further recites a fixed end of a first pair of parallel end faces, and a distance "a" from an edge of the conductive film to an edge of the ceramic body on a second pair of parallel end faces. As shown in Figs. 5 and 6, Nelson teaches that the distance 35 is a distance from the edge of the alleged conductive film to the edge of the alleged electrode on the fixed end of the alleged pair of parallel ends, and not on a second pair of parallel end faces. As such, distance 35 cannot reasonably be considered to correspond to a distance "a", as recited in claim 1.

The Office Action apparently concedes that Nelson does not explicitly teach the relationship of " $(c/2) \leq a \leq 5c$ ," as recited in claim 1, but, rather, relies on specific measurements disclosed in Nelson as satisfying the equation. As discussed above, however, Nelson does not teach, explicitly or implicitly, at least the recited distance "a".

Additionally, the Office Action asserts that Nelson teaches distance relationships that satisfy the relationship " $(c/2) \leq a \leq 5c$ ," as recited in claim 1. Nelson teaches that element 35 is large relative to the width 13 of tines 12 (paragraph [0041]). Nelson teaches that tines 12 have a width 13 of about 0.9 mm (paragraph [0035]). The Office Action asserts that, for mathematical simplification, the recited relationship " $(c/2) \leq a \leq 5c$ " may be simplified to recite " $c \leq 2a \leq 10c$ " "with the thickness 'c' actually being '2\*c' since the electrode (30) is inside two dielectric plates." While  $(c/2) \leq a \leq 5c$  may, mathematically, be simplified to  $c \leq 2a \leq 10c$ , the assertion that "c" is actually "2\*c" is incorrect and contrary to the features recited in claim 1, Applicants' specification, and the disclosure of Nelson, and is not sustainable as a mathematical substitution of the recited features, as discussed below.

The Office Action's assertion that the thickness "c" is actually "2\*c" is erroneous. Claim 1 recites " $(c/2) \leq a \leq 5c$ ." Simplifying this formula to  $c \leq 2a \leq 10c$  does not justify altering the value of "c". Applicants define "c" as the thickness of the ceramic body from the conductive film to the outside of one of the ceramic bodies forming one side of the unit electrode (paragraph [0021]; Fig. 2). The Office Action, in simplifying the formula  $(c/2) \leq a \leq 5c$  erroneously changes the value of constant "c" to "2\*c," confusing (1) what it interprets as the entire width of the electrode with (2) the width of the ceramic body defined by the distance "c" in Fig. 2.

The Office Action then asserts, with reference to Fig. 4, that Nelson discloses a distance 25 that can be considered to correspond to a distance "c," as recited in claim 1. Nelson discloses that the distance 25 can be 0.38 to 1 mm. Based on this disclosure, the

Office Action uses these values in attempting to assert that Nelson satisfies the feature of " $(c/2) \leq a \leq 5c$ ." In this regard, the Office Action improperly applies the simplified formula  $c \leq 2a \leq 10c$  using the erroneous constant of " $2*c$ " as a substitute for " $c$ ." As discussed above, " $2*c$ " is not recited in the pending claims.

The Office Action, in asserting that Nelson satisfies the formula " $(c/2) \leq a \leq 5c$ ," uses the values 0.5 to 2 mm for the value of " $a$ ." Under the Office Action's construction that element 35 corresponds to the distance " $a$ ," Nelson does not disclose that element 35 is 0.5 to 2 mm. As discussed above, Nelson merely teaches that element 35 is large relative to the width 13 of tines 12 (paragraph [0041]). Further, Nelson does not define in any sufficient corresponding terms the value of element 35, and certainly not in terms " $(c/2) \leq a \leq 5c$ ," as recited in claim 1.

Finally, Nelson does not contemplate the benefits of the relative distances recited in the pending claims. Figs. 4, 5 and 6 of Nelson clearly show that the distances 35 and 39 are much longer than the thickness 25. Nelson teaches the distance 35 is large relative to the width 13 of tines 12 to effectively increase the dielectric path (paragraph [0041]). Increasing insulation is conventionally attributable to inefficient integration of the conductive film and the insulating body during firing. The subject matter of the pending claims is directed to, among other issues, taking advantage of complete integration such that the specifically recited numerical relationships are possible. Nelson does not teach such features nor contemplate these ends.

Kellogg, Hemmingway and Okubo are not applied in a manner to overcome the above-identified shortfalls in the application of Nelson to the subject matter of the pending claims.

For at least the foregoing reasons, Nelson does not teach the combination of all of the features positively recited in independent claim 1. Additionally, claims 2-10 are also neither

taught, nor would they have been suggested, by the applied references for at least the respective dependence of these claims, directly or indirectly, on an allowable base claim, as well as for the separately patentable subject matter that each of these claims recites.

Accordingly, reconsideration and withdrawal of the rejections of claims 1-9 under 35 U.S.C. §§102(b), (e) and 103(a) as being anticipated by, or unpatentable over, the applied references are respectfully requested.

Additionally, the applied references, individually or in combination, do not teach, nor can they reasonably be considered to have suggested, the ceramic body is a dense ceramic and the ceramic body and the conductive film are integrated, as recited in dependent claim 10. As discussed above, the subject matter of the pending claims are directed to, among other issues, efficient integration of the ceramic body and the conductive film so as to make the numerical relationship recited in claim 1 possible. In this regard, the space for insulation can be minimized. Such integration is not contemplated by the applied references. As such, claim 10 should also be allowable.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-10 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:CJW/clf

Attachment:  
Replacement Sheets (3)

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